

CLAIMS

- 1 1. A seismic cable, comprising:
2 a support cable;
3 a signal cable attached to the support cable at a plurality of points spaced along the
4 length of the signal cable; and
5 at least one sensor module disposed on the signal cable.
- 1 2. The seismic cable of claim 1, further comprising a first sheath enclosing the
2 support cable and the signal cable.
- 1 3. The seismic cable of claim 2, wherein the first sheath comprises at least one of
2 is a skin, a jacket or an extrusion matrix.
- 1 4. The seismic cable of claim 1, wherein the support cable includes a plurality of
2 strengthening members.
- 1 5. The seismic cable of claim 4, wherein the strengthening members are cabled
2 by a second sheath.
- 1 6. The seismic cable of claim 1, wherein the support cable includes at least one
2 of a signal lead and a power lead.
- 1 7. The seismic cable of claim 6, further comprising an electronics module
2 powered over the power lead and capable of transmitting data over the signal lead.
- 1 8. The seismic cable of claim 7, wherein the support cable is sectioned.

1 9. The seismic cable of claim 1, wherein the signal cable includes a plurality of
2 leads cabled by a third sheath.

1 10. The seismic cable of claim 1, wherein the signal cable includes at least one
2 strengthening member.

1 11. The seismic cable of claim 1, further comprising a plurality of sensor modules
2 electrically connected to the signal cable.

1 12. The seismic cable of claim 1, wherein the sensor modules transmit data and
2 receive power over the signal cable.

1 13. The seismic cable of claim 1, further comprising:
2 a plurality of sensor modules electrically connected to and distributed along the signal
3 cable; and
4 a plurality of electronics modules by which the signal cable is attached to the support
5 cable at the points.

1 14. The seismic cable of claim 1, wherein the electronics modules are electrically
2 connected to the signal cable at the points and mechanically connected to the support cable.

1 15. The seismic cable of claim 1, wherein the signal cable is attached to the
2 support cable by a zipper mechanism.

1 16 The seismic cable of claim 1, wherein the plurality of points are spaced along
2 the length of the signal cable in proportion to a length of the sensor module.

1 17. The seismic cable of claim 16, wherein the plurality of points are positioned
2 between adjacent sensor modules

1 18. The seismic cable of claim 16, wherein the separations are created by pulling a
2 rip cord fabricated in the seismic cable to detach the signal cable from the support cable.

1 19. The seismic cable of claim 1, further comprising a plurality of arms
2 mechanically affixed to the support cable and rotationally connected to the signal cable to
3 attach the signal cable to the support cable at the points.

1 20. The seismic cable of claim 19, wherein the arms are at least one of rigid and
2 semi-rigid arms.

1 21. The seismic cable of claim 19, wherein the arms are mechanically fixed by a
2 plurality of clamps.

1 22. The seismic cable of claim 19, wherein the arms are rotationally connected by
2 a bearing.

1 23. The seismic cable of claim 19, further comprising a plurality of stops
2 restraining movement of the rotational connection along the length of the signal cable.

1 24. The seismic cable of claim 1, further comprising a plurality of sensor modules
2 electrically connected to and distributed along the signal cable and by which the support
3 cable and the signal cable are joined.

1 25. The seismic cable of 24, wherein the support cable passes through a groove in
2 the sensor modules.

1 26. The seismic cable of claim 1, wherein each of the sensor modules comprises a
2 housing defining a groove therethrough through which the support cable runs.

1 27. The seismic cable of claim 26, wherein the support cable is acoustically
2 decoupled from the housing by a plurality of elastic devices.

1 28. The seismic cable of claim 26, wherein the support cable is acoustically
2 decoupled from the housing by freely moving through the groove relative to the sensor
3 module.

1 29. A method for assembling a seismic cable, comprising attaching a support
2 cable to a signal cable at a plurality of points spaced along the length thereof.

1 30. The method of claim 29, wherein attaching the support cable to the signal
2 cable includes mechanically connecting an electronics module to the support cable and
3 electrically connecting the electronics module to the signal cable.

1 31. The method of claim 29, wherein attaching the support cable to the signal
2 cable includes zipping the signal cable to the support cable at the points.

1 32. The method of claim 29, wherein attaching the support cable to the signal
2 cable includes separating the support cable and the signal cable between the points.

1 33. The method of claim 32, wherein separating the support cable and the signal
2 cable includes pulling a rip-cord.

1 34. The method of claim 29, wherein attaching the support cable to the sensor
2 includes mechanically affixing at least one of a rigid and a semi-rigid arm to the support
3 cable and rotationally connecting the respective rigid or semi-rigid arm to the signal cable at
4 each of the points.

- 1 35. The method of claim 29, wherein attaching the support cable to the signal
2 cable includes connecting the support cable to the signal cable by a plurality of sensor
3 modules.